

**METROPOLITAN HEALTH DEPARTMENT  
DIVISION OF POLLUTION CONTROL**

**Regulation No. 4**

**Regulations for Hazardous Air Contaminants**

**As provided for in the Code of Law of the  
Metropolitan Government of Nashville  
and Davidson County, Tennessee,  
Chapter 10.56, Article I, Section  
10.56.090 and Article II, Section 10.56.210**

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By the Metropolitan Board of Health

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## EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

The following regulation pertains to the emission standards for hazardous pollutants and the permitting, testing, and reporting requirements of any source emitting these hazardous pollutants in Metropolitan Nashville and Davidson County. These regulations are promulgated as provided for in the Code of Law of the Metropolitan Government of Nashville and Davidson County, Tennessee, Chapter 10.56, Article I, Section 10.56.090 and Article II, Section 10.56.210.

### SECTION 4-1: Definitions

As used in this Regulation, all terms not defined herein shall have the meaning given them in the Metropolitan Code of Law, Chapter 10.56, Section 10.56.010, "Definitions."

- (a) **"Active section of disposal site"** - means any section of a disposal site other than an inactive section.
- (b) **"Adequately wet"** - means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.
- (c) **"Alternative method"** - means any method of sampling and analyzing for an air pollutant which is not a reference method but which has been demonstrated to the EPA Administrator's satisfaction to produce results adequate for his determination of compliance.
- (d) **"Asbestos"** - means the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.
- (e) **"Asbestos containing waste material"** - means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this Regulation. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovations operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.
- (f) **"Asbestos material"** - means asbestos or any material containing asbestos.
- (g) **"Asbestos mill"** - means any facility engaged in the conversion or any intermediate step in the conversion of asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.
- (h) **"Asbestos tailings"** - means any solid waste product of asbestos mining or milling operation which contains asbestos.
- (i) **"Beryllium"** - means the element beryllium. Where weights or concentrations are specified, such weights or concentrations apply to beryllium only, excluding the weight or concentration of any associated elements.
- (j) **"Beryllium alloy"** - means any metal to which beryllium has been added in order to increase its beryllium content and which contains more than 0.1 percent beryllium by weight.

- (k) **“Beryllium-containing waste”** - means material contaminated with beryllium and/or beryllium compounds used or generated during any process or operation performed by a source subject to this regulation.
- (l) **“Beryllium ore”** - means any naturally occurring material mined or gathered for its beryllium content.
- (m) **“Capital expenditure”** - means an expenditure for a physical or operational change to a stationary source which exceeds the product of the applicable “annual asset guideline repair allowance percentage” specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the stationary source’s basis, as defined by Section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to a stationary source must not be reduced by any “excluded additions” as defined for stationary sources constructed after December 31, 1981, in IRS Publication 534, as would be done for tax purposes. In addition, “annual asset guideline repair allowance” may be used even though it is excluded for tax purposes in IRS Publication 534.
- (n) **“Category I nonfriable asbestos-containing material (ACM)”** - means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy.
- (o) **“Category II nonfriable ACM”** - means any material, excluding Category I nonfriable ACM, containing more than one (1) percent asbestos as determined using the methods specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- (p) **“Cell room”** - means a structure(s) housing one or more mercury electrolytic chlor-alkali cells.
- (q) **“Ceramic plant”** - means a manufacturing plant producing ceramic items.
- (r) **“Commenced”** - means that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.
- (s) **“Commercial asbestos”** - means any material containing asbestos that is extracted from ore and has value because of its asbestos content.
- (t) **“Condenser stack gases”** - means the gaseous effluent evolved from the stack of processes utilizing heat to extract mercury metal from mercury ore.
- (u) **“Construction”** - means fabrication, erection, or installation of an affected facility.
- (v) **“Control device asbestos waste”** - means any asbestos-containing waste material that is collected in a pollution control device.
- (w) **“Cutting”** - means to penetrate with a sharp-edged instrument and include sawing, but does not include shearing, slicing, or punching.
- (x) **“Demolition”** - means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

- (y) **“Denuder”** - means a horizontal or vertical container which is part of a mercury chlor-alkali cell and in which water and alkali metal amalgam are converted to alkali metal hydroxide, mercury, and hydrogen gas in a short-circuited, electrolytic reaction.
- (z) **“Director”** - means the chief administrative officer of the Metropolitan Board of Health or his designated representative.
- (aa) **“Effective date”** - means the date this Regulation is adopted by the Metropolitan Board of Health.
- (bb) **“Emergency renovation operation”** - means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment.
- (cc) **“End box”** - means a container(s) located on one or both ends of a mercury chlor-alkali electrolyzer which serves as a connection between the electrolyzer and denuder for rich and stripped amalgam.
- (dd) **“End box ventilation system”** - means a ventilation system which collects mercury emissions from the end-boxes, the mercury pump sumps, and their water collection systems.
- (ee) **“Existing source”** - is any equipment, machine, device, article, contrivance, or installation which was in existence on the effective date of this Regulation, except that any existing equipment, machine, device, article, contrivance, or installation which is altered, replaced, or rebuilt that increases the amount of air contaminant emitted by such source or which results in the emission of any air contaminant not previously emitted shall be reclassified as a new source.
- (ff) **“Extraction plant”** - means a facility chemically processing beryllium ore to beryllium metal, alloy, or oxide, or performing any of the intermediate steps in these processes.
- (gg) **“Fabricating”** - means any processing (e.g., cutting, sawing, drilling) of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products fabricating includes bonding, debonding, grinding, sawing, drilling, or other similar operations performed as part of fabricating.
- (hh) **“Facility”** - means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.
- (ii) **“Facility component”** - means any part of a facility including equipment.
- (jj) **“Foundry”** - means a facility engaged in the melting or casting of beryllium metal or alloy.
- (kk) **“Friable asbestos material”** - means any material containing more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part

763 Section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by counting using PLM.

- (ll) **“Fugitive source”** - means any source of emissions not controlled by an air pollution control device.
- (mm) **“Glove bag”** - means a sealed compartment with attached inner gloves used for the handling of asbestos-containing materials, properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration’s (OSHA’s) final rule on occupational exposure to asbestos (Appendix G to 29 CFR 1926.58).
- (nn) **“Grinding”** - means to reduce to powder or small fragments and includes mechanical chipping or drilling.
- (oo) **“Hydrogen gas stream”** - means a hydrogen gas stream formed in the chlor-alkali cell denuder.
- (pp) **“In poor condition”** - means the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.
- (qq) **“Inactive waste disposal site”** - means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.
- (rr) **“Incinerator”** - means any furnace used in the process of burning waste for the primary purpose of reducing the volume of the waste by removing combustible matter.
- (ss) **“Installation”** - means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).
- (tt) **“Leak-tight”** - means that solids or liquids cannot escape or spill out. It also means dust-tight.
- (uu) **“Machine shop”** - means a facility performing cutting, grinding, turning, honing, milling, deburring, lapping, electrochemical machining, etching, or other similar operations.
- (vv) **“Malfunction”** - means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of asbestos are increased. Failures of equipment shall not be considered malfunctions if they are caused in any way by poor maintenance, careless operation, or any other preventable upset conditions, equipment breakdown, or process failure.
- (ww) **“Manufacturing”** - means the combining of commercial asbestos - or, in the case of woven friction products, the combining of textiles containing commercial asbestos - with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.
- (xx) **“Mercury”** - means the element mercury, excluding any associated elements, and includes mercury in particulates, vapors, aerosols, and compounds.

- (yy) “**Mercury chlor-alkali cell**” - means a device which is basically composed of an electrolyzer section and a denuder (decomposer) section and utilizes mercury to produce chlorine gas, hydrogen gas, and alkali metal hydroxide.
- (zz) “**Mercury chlor-alkali electrolyzer**” - means an electrolytic device which is part of a mercury chlor-alkali cell and utilizes a flowing mercury cathode to produce chlorine gas and alkali metal amalgam.
- (aaa) “**Mercury ore**” - means a mineral mined specifically for its mercury content.
- (bbb) “**Mercury ore processing facility**” - means a facility processing mercury ore to obtain mercury.
- (ccc) “**Monitoring system**” - means any system, required under the monitoring sections in applicable sections, used to sample and condition (if applicable), to analyze, and to provide a record of emissions or process parameters.
- (ddd) “**Natural barrier**” - means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.
- (eee) “**New source**” - means any stationary source, the construction or modification of which is commenced after the publication in the Federal Register of proposed national emission standards for hazardous air pollutants which will be applicable to such source.
- (fff) “**Nonfriable asbestos-containing material**” - means any material containing more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- (ggg) “**Nonscheduled renovation operation**” - means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operation experience, but for which an exact date cannot be predicted.
- (hhh) “**Outside air**” - means the air outside buildings and structures, including, but not limited to, the air under a bridge or in an open air ferry dock.
- (iii) “**Owner or operator**” - means any person who owns, leases, operates, controls, or supervises a stationary source.
- (jjj) “**Owner or operator of a demolition or renovation activity**” - means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation or both.
- (kkk) “**Particulate asbestos material**” - means finely divided particles of asbestos material or material containing asbestos.
- (III) “**Planned renovation operation**” - means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

(mmm)“**Propellant plant**” - means any facility engaged in the mixing, casting, or machining of propellant.

(nnn)“**Regulated asbestos-containing material (RACM)**” - means:

- (1) Friable asbestos material;
- (2) Category I nonfriable ACM that has become friable;
- (3) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or
- (4) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

(ooo)“**Remove**” - means to take out RACM or facility components that contain or are covered with RACM from any facility.

(ppp)“**Renovation**” - means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

(qqq)“**Resilient floor covering**” - means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy.

(rrr)“**Roadways**” - means surfaces on which motor vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.

(sss)“**Run**” - means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

(ttt)“**Sludge**” - means sludge produced by a treatment plant that processes municipal or industrial wastewaters.

(uuu)“**Sludge dryer**” - means a device used to reduce the moisture content of sludge by heating to temperatures above 65°C (ca. 150°F) directly with combustion gases.

(vvv)“**Standard**” - means a national emission standard including a design, equipment, work practice or operational standard for a hazardous air pollutant proposed or promulgated under this Regulation.

(www)“**Strip**” - means to take off RACM from any part of a facility or facility components.

(xxx)“**Structural member**” - means any load supporting member of a facility, such as beams and load supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

(yyy)“**Visible emissions**” - means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.



(zzz)“**Waste generator**” - means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

(aaaa)“**Waste shipment record**” - means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

(bbbb)“**Working day**” - means Monday through Friday and includes holidays that fall on any of the days Monday through Friday.

## **SECTION 4-2: Registration and Permits**

After the effective date of this Regulation, the owner or operator of any new or existing source, subject to this Regulation, shall meet the requirements of the Code of Law of the Metropolitan Government of Nashville and Davidson County, Chapter 10.56, Article I, Section 10.56.040, “Operating Permit”.

## **SECTION 4-3: Notification of Startup**

Any owner or operator of a source which has an initial startup after the effective date of this Regulation shall furnish the Director written notification as follows:

- (a) A notification of the anticipated date of initial startup of the source not more than sixty (60) days nor less than thirty (30) days prior to such date.
- (b) A notification of the actual date of initial startup of the source within fifteen (15) days after such date.

## **SECTION 4-4: Reporting Requirements**

The owner or operator of any existing source, or any new source to which a standard prescribed under this Regulation is applicable which had an initial startup which preceded the effective date of a standard prescribed under this Regulation shall, within ninety (90) days after the effective date, provide the following information in writing to the Director:

- (a) Name and address of the owner or operator.
- (b) The location of the source.
- (c) The type of hazardous pollutants emitted by the stationary source.
- (d) A brief description of the nature, size, design, and method of operation of the stationary source including the operating design capacity of such source. Identify each point of emission for each hazardous pollutant.

- (e) The average weight per month of the hazardous materials being processed by the source, over the last twelve (12) months preceding the date of the report.
- (f) A description of the existing control equipment for each emission point.
  - (1) Primary control device(s) for each hazardous pollutant.
  - (2) Secondary control device(s) for each hazardous pollutant.
  - (3) Estimated control efficiency (percent) for each control device.
- (g) A statement by the owner or operator of the source as to whether he can comply with the standards prescribed in this Regulation within 90 days of the effective date.
- (h) For sources subject to Section 4-7, Paragraph (h) and (I):
  - (1) A brief description of each process that generates asbestos-containing waste material.
  - (2) The average weight of asbestos-containing waste material disposed of, measured in kg/day.
  - (3) The emission control methods used in all stages of waste disposal.
  - (4) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator, and the name and location of the disposal site.
- (i) For sources subject to Section 4-7, Paragraph (j):
  - (1) A brief description of the site.
  - (2) The method or methods used to comply with the standard, or alternative procedures to be used.

#### **SECTION 4-5: Emission Tests and Monitoring**

- (a) The owner or operator of any source subject to this Regulation, at the request of the Director, shall be required to meet any or all of the requirements of the Code of Law of the Metropolitan Government of Nashville and Davidson County, Chapter 10.56, Article II, Section 10.56.290, "Measurement of Emissions," except as specified in Paragraph (c) of this Section.
- (b) The determination of compliance with the emission standards of this Regulation shall be by the applicable methods as outlined in 40 C.F.R., Part 61, Appendix B, "Test Methods," as the same may be amended or renumbered. Wastewater treatment plant sludge incinerator and drying plants for which mercury emissions exceed 1600 g/day, demonstrated either by stack sampling according to Paragraph 7(i) or sludge sampling according to Paragraph 7(ii), shall monitor mercury emissions at intervals of at least once per year by using sampling procedures specified in Paragraph 7(ii) or 7(ii)(c) and (d).
- (c) The owner or operator of any source subject to the emission standards of Section 4-8 and 4-9 shall test emissions from his sources:
  - (1) Within ninety (90) days of startup in the case of a new source which did not have an initial startup date preceding the effective date.

- (2) The Director shall be notified at least thirty (30) days prior to an emission test so that he may at his option observe the test.
- (3) Samples shall be taken over such a period or periods as are necessary to accurately determine the maximum emissions which will occur in any 24-hour period. Where emissions depend upon the relative frequency of operation of different types of processes, operating hours, operating capacities, or other factors, the calculation of maximum 24-hour period emissions will be based on that combination of factors which are likely to occur during the subject period and which result in the maximum emissions. No changes in the operation shall be made, which would potentially increase emissions above that determined by the most recent source test, until a new emission level has been estimated by calculation and the results reported to the Director.
- (4) All samples shall be analyzed and beryllium or mercury emissions shall be determined within thirty (30) days after the source test. All determinations shall be reported to the Director by a registered letter dispatched before the close of the next business day following such determination.
- (5) Records of emission test results and other data needed to determine total emissions shall be retained at the source and made available, for inspection by the Director, for a minimum of two (2) years.
- (6) Stationary sources using mercury chlor-alkali cells may test cell room emissions in accordance with Paragraph (i) or demonstrate compliance by Paragraph (ii) and assume ventilation emissions of 1,300 grams per day of mercury.
  - (i) Each owner or operator shall pass all cell room air enforced gas streams through stacks suitable for testing.
  - (ii) An owner or operator may carry out approved design, maintenance, and housekeeping practices. A list of approved design, maintenance, and housekeeping practices may be obtained from the Director.
- (7) Sludge incinerator plants or sludge drying plants or a combination of these plants may demonstrate compliance by testing in accordance with the procedure set forth in Paragraph (i) or (ii).
  - (i) Method 101 in Appendix B of the Federal Register Vol. 38, No. 66, April 6, 1973.
  - (ii) Method 105 of Appendix B of the Federal Register Vol. 40, No. 199, October 14, 1975, in accordance with the following procedures:
    - (A) A sludge test shall be conducted within ninety (90) days of the effective date in the case of an existing source or a new source which has an initial startup date preceding the effective date; or a sludge test shall be conducted within 90 days of startup in the case of a new source which did not have an initial startup date preceding the effective date.
    - (B) The Director shall be notified at least thirty (30) days prior to a sludge sampling test, so that he may, at his option, observe the test.

- (C) Sludge shall be sampled according to Paragraph (I), sludge charging rate for the plant shall be determined according to Paragraph (II), and the sludge analysis shall be performed according to Paragraph (III).
- (I) The sludge shall be sampled after dewatering and before incineration or drying, at a location that provides a representative sample of the sludge that is normally charged to the incinerator or dryer. Eight consecutive grab samples shall be obtained at intervals of between 45 and 60 minutes and thoroughly mixed into one sample. Each of the eight grab samples shall have a volume of at least 200 ml but shall not exceed 400 ml. A total of three composite samples shall be obtained within an operating period of 24-hours. When the 24-hour operating period is not continuous, the total sampling period shall not exceed 72 hours after the first grab sample is obtained. Samples shall not be exposed to any condition that may result in mercury contamination or loss.
- (II) The maximum 24-hour period sludge incineration or drying rate shall be determined by use of a flow rate measurement device that can measure the mass rate of sludge charged to the incinerator or dryer with an accuracy of  $\pm 5$  over its operating range. Other methods of measuring sludge mass charging rates, approved by the Director, may be used.
- (III) The handling, preparation, and analysis of sludge samples shall be accomplished according to Method 105 Appendix B of the Federal Register, Vol. 40, No. 199, October 14, 1975.
- (D) The mercury emissions shall be determined by use of the following equation:

$$EHg = 1 \times 10^{-3} c Q$$

Where:

EHg = mercury emissions, g/day

C = mercury concentration of sludge on a dry solids basis, ug/g (ppm)

Q = sludge charging rate kg/day

- (E) No changes in the operation of a plant shall be made after a sludge test has been conducted which would potentially increase emissions above the level determined by the most recent sludge test, until the new emission level has been estimated by calculation and the results reported to the Director.
- (F) All sludge samples shall be analyzed for mercury content within thirty (30) days after the sludge sample is collected. Each determination shall be reported to the Director by a registered letter dispatched before the close of the next business day following such determination.
- (G) Records of sludge sampling, charging rate determination and other data needed to determine mercury content of wastewater treatment plant sludges

shall be retained at the source and made available, for inspection by the Director, for a minimum of two (2) years.

#### **SECTION 4-6: Circumvention**

No owner or operator subject to the provisions of this Regulation shall build, erect, install, or use any article, machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size.

#### **SECTION 4-7: Emission Standards for Asbestos**

**(a) Standard for asbestos mills.**

- (1) Each owner or operator of an asbestos mill shall either discharge no visible emissions to the outside air from that asbestos mill, including fugitive sources, or use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (2) Each owner or operator of an asbestos mill shall meet the following requirements:
  - (i) Monitor each potential source of asbestos emissions from any part of the mill facility, including air cleaning devices, process equipment and buildings that house equipment for material processing and handling, at least once each day, during daylight hours for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least fifteen (15) seconds duration per source of emissions.
  - (ii) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunction, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Director, and revise as necessary, a written maintenance plan to include, at a minimum, the following:
    - (A) Maintenance schedule; and
    - (B) Recordkeeping plan.
  - (iii) Maintain records of the results of visible emissions monitoring and air cleaning device inspections and include the following:
    - (A) Date and time of each inspection;
    - (B) Presence or absence of visible emissions;

- (C) Condition of fabric filters, including presence of any tears, holes and abrasions;
  - (D) Presence of dust deposits on clean side of fabric filters;
  - (E) Brief description of corrective actions taken, including date and time; and
  - (F) Daily hours of operation for each air cleaning device.
  - (iv) Furnish upon request, and make available at the affected facility during normal business hours for inspection by the Director, all records required under this Paragraph.
  - (v) Retain a copy of all monitoring and inspection records for at least two (2) years.
  - (vi) Submit a copy of the quarterly visible emission monitoring records to the Director no later than thirty (30) days after the end of each calendar quarter if visible emission occurred during the quarter.
- (b) **Standard for Roadways.** No person may construct or maintain a roadway with asbestos tailings or asbestos-containing waste material on that roadway, unless, for asbestos tailings.
- (1) It is a temporary roadway or an area of asbestos ore deposits (asbestos mine); or
  - (2) It is a temporary roadway at an active asbestos mill site and is encapsulated with a resinous or bituminous binder. The encapsulated road surface must be maintained at a minimum frequency of one per year to prevent dust emissions; or
  - (3) It is encapsulated in asphalt concrete meeting the specifications contained in Section 401 of Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-85, 1985, or their equivalent.
- (c) **Standards for Manufacturing.**
- (1) Applicability. This paragraph applies to the following manufacturing operations using commercial asbestos.
    - (i) The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap or other textile materials.
    - (ii) The manufacture of cement products.
    - (iii) The manufacture of fireproofing and insulating materials.
    - (iv) The manufacture of friction products.
    - (v) The manufacture of paper, millboard or felt.
    - (vi) The manufacture of floor tile.
    - (vii) The manufacture of paints, coatings, caulks, adhesives and sealants.
    - (viii) The manufacture of plastics and rubber materials.
    - (ix) The manufacture of chlorine utilizing asbestos diaphragm technology.
    - (x) The manufacture of shotgun shell wads.
    - (xi) The manufacture of asphalt concrete.

- (2) Standards: Each owner or operator of any of the manufacturing operations to which this paragraph applies shall either:
- (i) Discharge no visible emissions to the outside air from these operations or from any building or structure in which they are conducted or from any other fugitive sources; or
  - (ii) Use the methods specified by Paragraph (k) to clean emissions from these operations containing particulate asbestos material before they escape to, or are vented to, the outside air.
  - (iii) Monitor each potential source of asbestos emissions from any part of the manufacturing facility, including air cleaning devices, process equipment and buildings housing material processing and handling equipment, at least once each day during daylight hours for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least fifteen (15) seconds duration per source of emissions.
  - (iv) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Director, and revise as necessary, a written maintenance plan to include, at a minimum, the following:
    - (A) Maintenance schedule; and
    - (B) Recordkeeping plan.
  - (v) Maintain records of the results of visible emissions monitoring and air cleaning device inspections and include the following:
    - (A) Date and time of each inspection;
    - (B) Presence or absence of visible emissions;
    - (C) Condition of fabric filters, including presence of any tears, holes and abrasions;
    - (D) Presence of dust deposits on clean side of fabric filters;
    - (E) Brief description of corrective actions taken, including date and time; and
    - (F) Daily hours of operation for each air cleaning device.
  - (vi) Furnish upon request and make available at the affected facility during normal business hours for inspection by the Director, all records required under this paragraph.
  - (vii) Retain a copy of all monitoring and inspection records for at least two (2) years.
  - (viii) Submit a quarterly report of the visible emission monitoring records to the Director no later than thirty (30) days after the end of each calendar quarter if visible emissions occurred during the quarter.

**(d) Standards of Demolition and Renovation.**

- (1) **Applicability.** To determine the applicability of this paragraph, prior to the commencement of a demolition or renovation operation, the owner or operator of the demolition or renovation must thoroughly inspect the affected facility or part thereof where the demolition or renovation will occur for the presence of asbestos including Category I and Category II nonfriable ACM. The notification requirements and the procedures for asbestos emission control apply to each owner or operator of a demolition or renovation operation, including the removal of RACM as follows:
- (i) In a facility being demolished, all the notification requirements of Paragraph (d)(2) and the procedures for asbestos emission control of Paragraph (d)(3) apply, except as provided in Paragraph (d)(1)(ii), if the combined amount of RACM is:
    - (A) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or
    - (B) At least one cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.
  - (ii) In a facility being demolished, only the notification requirements of Paragraphs (d)(2)(i), (d)(2)(ii), (d)(2)(iii)(A) and (D), (d)(2)(iv)(A) through (G), (d)(2)(iv)(I) and (d)(2)(iv)(P) apply, if the combined amount of RACM is:
    - (A) Less than 80 linear meters (260 linear feet) on pipes, less than 15 square meters (160 square feet) on other facility components, and
    - (B) Less than one cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously or there is no asbestos.
  - (iii) If the facility is being demolished under an order of a State or local government agency, issued because the facility is structurally unsound and in danger of imminent collapse, only the requirements of Paragraphs (d)(2)(i), (d)(2)(ii), (d)(2)(iii)(C), (d)(2)(iv) (except (d)(2)(iv)(H)), (d)(2)(v), and (d)(3)(iv) through (d)(3)(ix) apply.
  - (iv) In a facility being renovated, including any individual nonscheduled renovation operation, all the notification requirements of Paragraph (d)(2) and the procedures for asbestos emission control of Paragraph (d)(3) apply if the combined amount of RACM to be stripped, removed, dislodged, cut, drilled or similarly disturbed is:
    - (A) At least 80 linear meters (260 linear feet) on pipes or at least 15 square meters (160 square feet) on other facility components, or
    - (B) At least one (1) cubic meter (35 cubic feet) off facility components where the length or area could not be measured previously.
    - (C) To determine whether Paragraph (d)(1)(iv) applies to planned renovation operations involving individual nonscheduled operations, predict the combined additive amount of RACM to be removed or stripped during a calendar year of January 1 through December 31.



- (D) To determine whether Paragraph (d)(1)(iv) applies to emergency renovation operations, estimate the combined amount of RACM to be removed or stripped as a result of the sudden, unexpected event that necessitated the renovation and add to the cumulative amount of RACM from Paragraph (d)(1)(iv)(C).
  - (v) Owners or operators of demolition and renovation operations are exempt from the requirements of Sections 4-3 and 4-4 of this Regulation.
- (2) Notification requirements. Each owner or operator of a demolition or renovation activity to which this Section applies shall:
- (i) Provide the Director with written notice of intention to demolish or renovate. Delivery of the notice by U. S. Postal Service, commercial delivery service or hand delivery is acceptable.
  - (ii) Update the notice, as necessary, including when the amount of asbestos affected changes by at least twenty (20) percent.
  - (iii) Postmark or deliver the notice as follows:
    - (A) At least ten (10) working days prior to any activity that would disturb asbestos material if the operation is described in Paragraphs (d)(1)(i) and (d)(1)(iv) except (d)(1)(iv)(C) and (d)(1)(iv)(D). If the operation is as described in Paragraph (d)(1)(ii) of this Paragraph, notification is required ten (10) working days before demolition begins.
    - (B) At least ten (10) working days before the end of the period for which notice is being given for renovation described in Paragraph (d)(1)(iv)(C).
    - (C) As early as possible before, but not later than, the following working day if the operation is a demolition ordered according to Paragraph (d)(1)(iii) or, if the operation is a renovation described in Paragraph (d)(1)(iv)(D).
    - (D) For asbestos stripping or removal work in a demolition or renovation operation described in Paragraphs (d)(1)(i) and (d)(1)(iv), except (d)(1)(iv)(C) and (d)(1)(iv)(D) and for a demolition described in Paragraph (d)(1)(ii), that will begin on a date other than the date contained in the original notice, notice of the new start date must be provided to the Director as follows:
      - (I) When asbestos stripping or removal operation or demolition operation covered by this paragraph will begin after the date contained in the notice.
        - (a) Notify the Director of the new start date by telephone as soon as possible before the original start date; and
        - (b) Provide the Director with a written notice of the new start date as soon as possible before, and no later than, the original start date. Delivery of the updated notice by the U. S. Postal Service, commercial delivery service, or hand delivery is acceptable.

- (II) When the asbestos stripping or removal operation or demolition operation covered by this paragraph will begin on a date earlier than the original start date.
  - (a) Provide the Director with a written notice of the new start date at least ten (10) working days before asbestos stripping or removal work begins.
  - (b) For demolitions covered by Paragraph (d)(1)(ii), provide the Director written notice of a new start date at least ten (10) working days before commencement of demolition. Delivery of updated notice by U. S. Postal Service, commercial delivery service or hand delivery is acceptable.
- (III) In no event shall an operation covered by this paragraph begin on a date other than the date contained in the written notice of the new start date.
- (iv) Include the following in the notice:
  - (A) An indication of whether the notice is the original or a revised notification.
  - (B) Name, address and telephone number of both the facility owner and operator and the asbestos removal contractor owner and operator.
  - (C) Type of operation: demolition or renovation.
  - (D) Description of the facility or affected part of the facility including the size (square feet and number of floors), age and present and prior use of the facility.
  - (E) Procedure, including analytical methods, employed to detect the presence of RACM, Category I and Category II nonfriable ACM.
  - (F) Estimate of the approximate amount of RACM to be removed from the facility in terms of length of pipe (linear feet), surface area (square feet) on other facility components or volume (cubic feet) if off the facility components. Also, estimate the approximate amount of Category I and Category II nonfriable ACM in the affected part of the facility that will not be removed before demolition.
  - (G) Location and street address (including building number or name and floor or room number, if appropriate), city, county and state of the facility being demolished or renovated.
  - (H) Scheduled starting and completion dates of asbestos removal work (or any other activity that would disturb asbestos material) in a demolition or renovation. Planned renovation operations involving individually nonscheduled operations shall only include the beginning and ending dates of the report period as described in Paragraph (d)(1)(iv)(C).
  - (I) Scheduled starting and completion dates of the demolition or renovation.
  - (J) Description of planned demolition or renovation work to be performed and method(s) to be employed, including demolition or renovation techniques to be used and a description of affected facility components.

- (K) Description of work practices and engineering controls to be used to comply with the requirements of this regulation, including asbestos removal and waste-handling emission control procedures.
- (L) Name and location of the waste disposal site where the asbestos-containing waste material will be deposited.
- (M) A certification that at least one person trained as required by Paragraph (d)(3)(viii) will supervise the stripping and removal described by this notification. This requirement shall become effective November 20, 1991.
- (N) For facilities described in Paragraph (d)(1)(iii), the name, title and authority of the State or local government representative who has ordered the demolition, the date the order was issued and the date on which the demolition was ordered to begin. A copy of the order shall be attached to the notification.
- (O) For emergency renovations described in Paragraph (d)(1)(iv)(D), the date and hour that the emergency occurred, a description of the sudden, unexpected event, and an explanation of how the event caused an unsafe condition, or would cause equipment damage or an unreasonable financial burden.
- (P) Description of procedures to be followed in the event that unexpected RACM is found or Category II nonfriable ACM becomes crumbled, pulverized or reduced to powder.
- (Q) Name, address and telephone number of the waste transporter.
- (v) The information required in Paragraph (d)(1)(iv) must be reported on the form provided by the Metropolitan Health Department.
- (3) Procedures for asbestos emission control. Each owner or operator of a demolition or renovation activity to whom Paragraph (d) applies, according to Paragraph (d)(1) shall comply with the following procedures:
  - (i) Remove all RACM from a facility being demolished or renovated before any activity begins that would disturb the material or preclude access to the material for subsequent removal. RACM need not be removed before demolition if:
    - (A) It is Category I nonfriable ACM that is not in poor condition and not friable.
    - (B) It is on a facility component that is encased in concrete or other similarly hard material and is adequately wet whenever exposed during demolition; or
    - (C) It was not accessible for testing and was, therefore, not discovered until after demolition began and, as a result of the demolition, the material cannot be safely removed. If not removed for safety reasons, the exposed RACM and any asbestos-contaminated debris must be treated as asbestos-containing waste material and adequately wet at all times until disposed of.
    - (D) It is Category II nonfriable ACM and the probability is low that the material will be come crumbled, pulverized or reduced to powder during demolition.

- (ii) When a facility component that contains, is covered with, or is coated with RACM is being taken out of the facility as a unit or in sections:
  - (A) Adequately wet all RACM exposed during cutting or disjoining operations; and
  - (B) Carefully lower each unit or section to the floor and to ground level, not dropping, throwing, sliding or otherwise damaging or disturbing the RACM.
- (iii) When RACM is stripped from a facility component while it remains in place in the facility, adequately wet the RACM during the stripping operation.
  - (A) In renovation operations, wetting is not required if:
    - (I) The owner or operator has obtained prior written approval from the Director based on a written application that wetting to comply with this paragraph would unavoidably damage equipment or present a safety hazard; and
    - (II) The owner or operator uses one of the following emission control methods:
      - (a) A local exhaust ventilation and collection system designed and operated to capture particulate asbestos material produced by the stripping and removal of the asbestos materials. The system must have no visible emissions to the outside air or be designed and operated in accordance with the requirements of Paragraph (k) of this Section.
      - (b) A glove-bag system designed and operated to contain the particulate asbestos material produced by the stripping of the asbestos materials.
      - (c) Leak-tight wrapping to contain all RACM prior to dismantlement.
  - (B) In renovation operations where wetting would result in equipment damage or a safety hazard, and the methods allowed by Paragraph (d)(1)(iii)(A) cannot be used, another method may be used after obtaining written approval from the Director based upon a determination that it is equivalent to wetting in controlling emissions or to the methods allowed in Paragraph (d)(1)(ii)(A).
  - (C) A copy of the Director's written approval shall be kept at the work site and made available for inspection.
- (iv) After a facility component covered with, coated with or containing RACM has been taken out of the facility as a unit or in sections pursuant to Paragraph (d)(3)(ii), it shall be stripped or contained in leak-tight wrapping, except as described in Paragraph (d)(3)(v). If stripped, either:
  - (A) Adequately wet the RACM during stripping; or
  - (B) Use a local exhaust ventilation and collection system designed and operated to capture the particulate asbestos material produced by the stripping. The

system must exhibit no visible emissions to the outside air or be designed and operated in accordance with the requirements of Paragraph (k).

- (v) For large facility components such as reactor vessels, large tanks and steam generators, but not beams (which must be handled in accordance with Paragraphs (d)(3)(ii), (iii), and (iv)) the RACM is not required to be stripped if the following requirements are met.
  - (A) The component is removed, transported, stored, disposed of or reused without disturbing or damaging the RACM.
  - (B) The component is encased in a leak-tight wrapping.
  - (C) The leak-tight wrapping is labeled according to Paragraph (h)(4)(i)(A), (B) and (C) during all loading and unloading operations and during storage.
- (vi) For all RACM, including material that has been removed or stripped:
  - (A) Adequately wet the material and ensure that it remains wet until collected and contained or treated in preparation for disposal in accordance with Paragraph (i); and
  - (B) Carefully lower the material to the ground and floor, not dropping, throwing, sliding or otherwise damaging or disturbing the material.
  - (C) Transport the material to the ground via leak-tight chutes or containers if it has been removed or stripped more than fifty (50) feet above ground level and was not removed as units or in sections.
  - (D) RACM contained in leak-tight wrapping that has been removed in accordance with Paragraphs (d)(3)(iv) and (d)(3)(iii)(A)(II)(c) need not be wetted.
- (vii) When the temperature at the point of wetting is below 0°C (32°F):
  - (A) The owner or operator need not comply with Paragraph (d)(3)(ii)(A) and the wetting provision of (d)(3)(iii).
  - (B) The owner or operator shall remove facility components containing, coated with or covered with RACM as units or in sections to the maximum extent possible.
  - (C) During periods when wetting operations are suspended due to freezing temperatures, the owner or operator must record the temperature in the area containing the facility components at the beginning, middle and end of each work day and keep daily temperature records available for inspection by the Director during normal business hours at the demolition or renovation site. The owner or operator shall retain the temperature records for at least two (2) years.
- (viii) Effective November 20, 1991, no RACM shall be stripped, removed or otherwise handled or disturbed at a facility regulated by this section unless at least one on-site representative, such as a foreman or management-level person or other authorized representative, trained in the provisions of this regulation and the means of complying with them, is present. Every two (2) years, the trained on-

site individual shall receive refresher training in the provisions of this regulation. The required training shall include at a minimum: applicability; notifications; material identification; control procedures for removal including, at least, wetting, local exhaust ventilation, negative pressure enclosures, glove bag procedures and High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and record keeping; and asbestos hazards and worker protection. Evidence that the required training has been completed shall be posted and made available for inspection by the Director at the demolition or renovation site.

- (ix) For facilities described in Paragraph (d)(1)(iii), adequately wet the portion of the facility that contains RACM during the wrecking operations.
  - (x) No facility may be demolished by intentional burning without prior written approval of the Director. If a facility is demolished by intentional burning, all RACM including Category (and Category II nonfriable ACM) must be removed in accordance with this section before burning.
- (e) **Standard for spraying.** The owner or operator of an operation in which ACM is spray applied shall comply with the following requirements:
- (1) For spray-on application on buildings, structures, pipes and conduits, do not use material containing more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy, except as provided in Paragraph (e)(3).
  - (2) For spray on application of materials that contain more than one (1) percent asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy, on equipment and machinery except as provided in Paragraph (e)(3).
    - (i) Notify the Director at least twenty (20) days before beginning the spraying operation. Include the following information in the notice:
      - (A) Name and address of owner or operator.
      - (B) Location of spraying operation.
      - (C) Procedures to be followed to meet the requirements of this paragraph.
    - (ii) Discharge no visible emissions to the outside air from spray-on application of the ACM or use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
  - (3) The requirements of Paragraphs (e)(1) and (e)(2) do not apply to the spray-on application of materials where the asbestos fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not friable after drying.
  - (4) Owners or operators of sources subject to this paragraph are exempt from the requirements of Sections 4-3 and 4-4 of this Regulation..
- (f) **Standard for fabricating.**

- (1) This section applies to the following fabricating operations using commercial asbestos:
  - (i) The fabrication of cement building products.
  - (ii) The fabrication of friction products, except those operations that primarily install asbestos friction materials on motor vehicles.
  - (iii) The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture, bulkheads, partitions and ceilings for marine construction; and flow control devices for the molten metal industry.
- (2) Each owner or operator of any of the fabricating operations to which this section applies shall either:
  - (i) Discharge no visible emissions to the outside air from any of the operations or from any building or structure in which they are conducted or from any other fugitive sources; or
  - (ii) Use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
  - (iii) Monitor each potential source of asbestos emissions from any part of the fabricating facility, including air cleaning devices, process equipment and buildings that house equipment for material processing and handling, at least once each day, during daylight hours, for visible emissions to the outside air during periods of operation. The monitoring shall be by visual observation of at least fifteen (15) seconds duration per source of emissions.
  - (iv) Inspect each air cleaning device at least once each week for proper operation and for changes that signal the potential for malfunctions, including, to the maximum extent possible without dismantling other than opening the device, the presence of tears, holes and abrasions in filter bags and for dust deposits on the clean side of bags. For air cleaning devices that cannot be inspected on a weekly basis according to this paragraph, submit to the Director, and revise as necessary a written maintenance plan to include, at a minimum, the following:
    - (A) Maintenance schedule.
    - (B) Recordkeeping plan.
  - (v) Maintain records of the results of the visible emission monitoring and air cleaning device inspections including the following:
    - (A) Date and time of each inspection.
    - (B) Presence or absence of visible emissions.
    - (C) Condition of fabric filters, including presence of any tears, holes and abrasions.
    - (D) Presence of dust deposits on clean side of fabric filters.
    - (E) Brief description of corrective actions taken, including date and time.
    - (F) Daily hours of operation for each air cleaning device.

- (vi) Furnish upon request and make available at the affected facility during normal business hours for inspection by the Director, all records required under this paragraph.
  - (vii) Retain a copy of all monitoring and inspection records for at least two (2) years.
  - (viii) If visible emissions occurred during the quarter, submit a copy of the visible emission monitoring records to the Director. Quarterly reports shall be postmarked no later than thirty (30) days following the end of each calendar quarter in which visible emissions occurred.
- (g) **Standard for insulating materials.** No owner or operator of a facility may install or reinstall on a facility component any insulating materials that contain commercial asbestos if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this paragraph do not apply to spray-applied insulating materials regulated under Paragraph (e).
- (h) **Standard for waste disposal for asbestos mills.** Each owner or operator of any source covered under the provisions of Paragraph (a) shall:
- (1) Deposit all asbestos-containing waste material at a waste disposal site operated in accordance with the provisions of Paragraph (m); and
  - (2) Discharge no visible emissions to the outside air from the transfer of control device asbestos waste to the tailings conveyor, or use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air. Dispose of the asbestos waste from control devices in accordance with Paragraph (i)(1) or Paragraph (h)(3); and
  - (3) Discharge no visible emissions to the outside air during the collection, processing, packaging or on-site transporting of any asbestos-containing waste material, or use one of the disposal methods specified in Paragraphs (h)(3)(i) or (ii).
    - (i) Use a wetting agent as follows:
      - (A) Adequately mix all asbestos-containing waste material with a wetting agent recommended by the manufacturer of the agent to effectively wet dust and tailings, before depositing the material at a waste disposal site. Use the agent as recommended for the particulate dust by the manufacturer of the agent.
      - (B) Discharge no visible emissions to the outside air from the wetting operation or use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
      - (C) Wetting may be suspended when the ambient temperature at the waste disposal site is less than -9.5°C (15°F), as determined by an appropriate measurement method with an accuracy of ±1°C (±2°F). During periods when wetting operations are suspended, the temperature must be recorded at least at hourly intervals, and records must be retained for at least two (2) years in a form suitable for inspection.



- (ii) Use an alternative emission control and waste treatment method that has received prior written approval by the United States Environmental Protection Agency. To obtain approval for an alternative method, a written application must be submitted to the United States Environmental Protection Agency demonstrating that the following criteria are met:
  - (A) The alternative method will control asbestos emissions equivalent to currently required methods.
  - (B) The suitability of the alternative method for the intended application.
  - (C) The alternative method will not violate other regulations.
  - (D) The alternative method will not result in increased water pollution, land pollution or occupational hazards.
- (4) When waste is transported by vehicle to a disposal site:
  - (i) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The markings must:
    - (A) Be displayed in such a manner and location that a person can easily read the legend.
    - (B) Conform to the requirements for 51 cm x 36 cm (20 in. x 14 in.) upright format signs specified in 29 CFR 1910.145 (d)(4) and this paragraph; and
    - (C) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend  
 DANGER  
 ASBESTOS DUST HAZARD  
 CANCER AND LUNG DISEASE HAZARD  
 Authorized Personnel Only  
 Notation  
 2.5 cm (1 in.) Sans Serif, Gothic or Block  
 2.5 cm (1 in.) Sans Serif, Gothic or Block  
 1.9 cm (3/4 in.) Sans Serif, Gothic or Block  
 14 Point Gothic

Spacing between any 2 lines must be at least equal to the height of the upper of the two lines.

- (ii) For off-site disposal, provide a copy of the waste shipment record, described in Paragraph (h)(5)(i), to the disposal site owner or operator at the same time as the asbestos-containing waste material is delivered to the disposal site.
- (5) For all asbestos-containing waste material transported off the facility site:
  - (i) Maintain asbestos waste shipment records and include the following information:
    - (A) The name, address and telephone number of the waste generator.

- (B) The name and address of the local, State or EPA regional agency responsible for administering the asbestos NESHAP program.
  - (C) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).
  - (D) The name and telephone number of the disposal site operator.
  - (E) The name and physical site location of the disposal site operator.
  - (F) The date transported.
  - (G) The name, address and telephone number of the transporter(s).
  - (H) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked and labeled and are in all respects in proper condition for transport by highway according to applicable international and government regulations.
- (ii) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within thirty five (35) days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.
  - (iii) Report in writing to the Metropolitan Health Department if a copy of the waste shipment record, signed by the owner or operator of the designated site, is not received by the waste generator within forty five (45) days of the date the waste was accepted by the initial transporter. Include the following information in the report:
    - (A) A copy of the waste shipment record for which a confirmation of delivery was not received, and
    - (B) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.
  - (iv) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least two (2) years.
- (6) Furnish upon request, and make available for inspection by the Director, all records required under this Section.
- (i) **Standard for waste disposal for manufacturing, fabricating, demolition, renovation and spraying operations.** Each owner or operator of any source covered under the provisions of Paragraphs (c), (d), (e), and (f) shall comply with the following provisions.
    - (1) Discharge no visible emissions to the outside air during the collection, processing (including incineration), packaging or transporting of any asbestos-containing waste material generated by the source, or use one of the emission control and waste treatment methods specified in Paragraphs (i)(1)(i) thru (iv).
      - (i) Adequately wet asbestos-containing waste material as follows:

- (A) Mix control device asbestos waste to form a slurry; adequately wet other asbestos-containing waste material; and
- (B) Discharge no visible emissions to the outside air from collection, mixing, wetting and handling operations, or use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air; and
- (C) After wetting, seal all asbestos-containing waste material in leak-tight containers while wet; or, for materials that will not fit into containers without additional breaking, put materials into leak-tight wrapping; and
- (D) Label the containers or wrapped materials specified in Paragraph (i)(1)(i)(C) using warning labels specified by OSHA under 29 CFR 1910.1001(j)(2) or 1926.58(k)(2)(iii). The labels shall be printed in letters of sufficient size and contrast so as to be readily visible and legible.
- (E) For asbestos-containing waste material to be transported off the facility site, label containers or wrapped materials with the name of the waste generator and the location at which the waste was generated.
- (ii) Process asbestos-containing waste material into nonfriable forms as follows:
  - (A) Form all asbestos-containing waste material into nonfriable pellets or other shapes;
  - (B) Discharge no visible emissions to the outside air from collection and processing operations, including incineration, or use the method specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.
- (iii) For facilities demolished where the RACM is not removed prior to demolition according to Paragraphs (d)(3)(i)(A), (B), (C), and (D) or for facilities demolished according to Paragraph (d)(3)(ix), adequately wet asbestos-containing waste material at all times after demolition and keep wet during handling and loading for transport to a disposal site. Asbestos-containing waste materials covered by this paragraph do not have to be sealed in leak-tight containers or wrapping but may be transported and disposed of in bulk.
- (iv) Use an alternative emission control and waste treatment method that has received prior approval by the EPA Administrator according to the procedure described in Paragraph (h)(3)(ii).
- (v) As applied to demolition and renovation, the requirements of Paragraph (i)(1) do not apply to Category I nonfriable ACM waste and Category II nonfriable ACM waste that did not become crumbled, pulverized or reduced to powder.
- (2) All asbestos-containing waste material shall be deposited as soon as is practical by the waste generator at:
  - (i) A waste disposal site operated in accordance with the provisions of Paragraph (m), or

- (ii) An EPA-approved site that converts RACM and asbestos-containing waste material into nonasbestos (asbestos-free) material according to the provisions of Paragraph (n).
  - (iii) The requirements of Paragraph (i)(2) do not apply to Category I nonfriable ACM that is not RACM.
- (3) Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of waste so that the signs are visible. The markings must conform to the requirements of Paragraph (h)(4)(i)(A), (B), and (C).
- (4) For all asbestos-containing waste material transported off the facility site:
  - (i) Maintain waste-shipment records and include the following information:
    - (A) The name, address and telephone number of the waste generated.
    - (B) The name and address of the local, State, or EPA regional office responsible for administering the asbestos NESHAP program.
    - (C) The approximate quantity in cubic meters (cubic yards).
    - (D) The name and telephone number of the disposal site operator.
    - (E) The name and physical site location of the location of the disposal site.
    - (F) The date transported.
    - (G) The name, address and telephone number of the transporter(s).
    - (H) A certification that the contents of this consignment are fully and accurately described by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and government regulations.
  - (ii) Provide a copy of the waste shipment record, described in Paragraph (i)(4)(i), to the disposal site owners or operators at the same time as the asbestos-containing waste material is delivered to the disposal site.
  - (iii) For waste shipments where a copy of the waste shipment record, signed by the owner or operator of the designated disposal site, is not received by the waste generator within thirty five (35) days of the date the waste was accepted by the initial transporter, contact the transporter and/or the owner or operator of the designated disposal site to determine the status of the waste shipment.
  - (iv) Report in writing to the Metropolitan Health Department if a copy of the waste shipment record, signed by the owner or operator of the designated waste disposal site, is not received by the waste generator within forty five (45) days of the date the waste was accepted by the initial transporter. Include the following information in the report:
    - (A) A copy of the waste shipment record for which a confirmation of delivery was not received; and
    - (B) A cover letter signed by the waste generator explaining the efforts taken to locate the asbestos waste shipment and the results of those efforts.

- (v) Retain a copy of all waste shipment records, including a copy of the waste shipment record signed by the owner or operator of the designated waste disposal site, for at least two (2) years.
- (5) Furnish upon request, and make available for inspection by the Director, all records required under this Section.
- (j) **Standard for inactive waste disposal sites for asbestos mills and manufacturing and fabricating operations.** Each owner or operator of any inactive waste disposal site that was operated by sources covered under Paragraphs (a), (c) or (f) and received deposits of asbestos-containing waste material generated by the sources, shall:
  - (1) Comply with one of the following:
    - (i) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph; or
    - (ii) Cover the asbestos-containing waste material with at least 15 cm (6 inches) of compacted nonasbestos-containing material, and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste; or
    - (iii) Cover the asbestos-containing waste material with at least two (2) feet compacted nonasbestos-containing material, and maintain it to prevent exposure of the asbestos-containing waste; or
    - (iv) For inactive waste disposal sites for asbestos tailings, a resinous or petroleum-based dust suppression agent that effectively binds dust to control surface air emissions may be used instead of the methods in Paragraphs (j)(1)(i), (ii), and (iii). Use the agent in the manner and frequency recommended for the particular asbestos tailings by the manufacturer of the dust suppression agent to achieve and maintain dust control. Other equally effective dust suppression, for the purpose of this paragraph, may be used only after approval by the United States Environmental Protection Agency. Any used, spent or other waste oil is not considered a dust suppression agent.
  - (2) Unless a natural barrier adequately deters access to the general public, install and maintain warning signs and fencing as follows, or comply with Paragraph (j)(1)(i) or (j)(1)(iii).
    - (i) Display warning signs at all entrances and at intervals of 100 meters (330 feet) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material was deposited. The warning signs must:
      - (A) Be posted in such a manner and location that a person can easily read the legend;
      - (B) Conform to the requirements for 51 cm x 36 cm (20 in. x 14 in.) upright format signs specified in 29 CFI 1910.145(d)(4) and this paragraph; and
      - (C) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

LEGEND	NOTATION
Asbestos Waste Disposal Site	1 inch Sans Serif, Gothic or Block
Do not Create Dust	3/4 inch Sans Serif, Gothic or Block
Breathing Asbestos Is Hazardous	14 point Gothic
To Your Health	

Spacing between any two lines must be at least equal to the height of the upper two lines.

- (ii) Fence the perimeter of the site in a manner adequate to deter access by the general public.
- (iii) When requesting a determination on whether a natural barrier adequately deters public access, supply information enabling the Director to determine whether a fence or a natural barrier adequately deters access by the general public.
- (3) The owner or operator may use an alternative control method only after approval from the United States Environmental Protection Agency rather than comply with the requirements of Paragraph (j)(1) or (j)(2).
- (4) Notify the Director in writing at least forty five (45) days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site under this section, and follow the procedures specified in the notification. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Director at least ten (10) working days before excavation begins, and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
  - (i) Scheduled starting and completion dates.
  - (ii) Reason for disturbing the waste.
  - (iii) Procedures to be used to control emissions during the excavation, storage, transport and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Director may require changes in the emission control procedures to be used.
  - (iv) Location of any temporary storage site and the final disposal site.
- (5) Within sixty (60) days of a site becoming inactive and after the effective date of this Regulation, record, in accordance with Metropolitan Nashville and Davidson County and State of Tennessee law, a notation on the deed to the facility property and on any other instrument that would normally be examined during a title search. This notification will in perpetuity notify any potential purchases of the property that:
  - (i) The land has been used for the disposal of asbestos-containing waste material;

- (ii) The survey plot and record of the location and quantity of asbestos-containing waste disposed of within the disposal site required in Paragraph (m)(6) have been filed with the Director; and
- (iii) The site is subject to all applicable asbestos NESHAP requirements.

**(k) Air Cleaning.**

- (1) The owner or operator who uses air cleaning as specified in Paragraphs (a)(1), (c)(2)(ii), (d)(3)(iii)(A)(II)(a), (d)(3)(iv)(B), (e)(2)(ii), (f)(2)(ii), (h)(2), (h)(3)(i)(B), (i)(1)(ii)(B), (i)(1)(ii)(B), and (n)(5) shall:
  - (i) Use fabric filter collection devices, except as noted in Paragraph (k)(2) doing all of the following:
    - (A) Ensuring that the air flow permeability, as determined by ASTM Method D737-75, does not exceed  $30 \text{ ft}^3/\text{min}/\text{ft}^2$  for woven fabrics or  $35 \text{ ft}^3/\text{min}/\text{ft}^2$  for felted fabrics, except that  $40 \text{ ft}^3/\text{min}/\text{ft}^2$  for woven and  $45 \text{ ft}^3/\text{min}/\text{ft}^2$  for felted fabrics is allowed for filtering air from asbestos ore dryers; and
    - (B) Ensuring that the felted fabric weighs at least 14 ounces per square yard and is at least one-sixteenth inch thick throughout; and
    - (C) Avoiding the use of synthetic fabrics that contain fill yarn other than that which is spun.
  - (ii) Properly install, use, operate and maintain all air cleaning equipment authorized by this section. Bypass devices may be used only during upset or emergency conditions and then only for so long as it takes to shut down the operation generating the particulate asbestos material.
  - (iii) For fabric filter collection devices installed after January 10, 1989, provide for easy inspection for faulty bags.
- (2) There are the following exceptions to Paragraph (k)(1)(i).
  - (i) After January 10, 1989, if the use of fabric creates a fire explosion hazard, or the Director determines that a fabric filter is not feasible, the Director may authorize as a substitute the use of wet collectors designed to operate with a unit contacting energy of at least forty (40) inches water gage pressure.
  - (ii) Use a HEPA filter that is certified to be at least 99.97 percent efficient for 0.3 micron particles.
  - (iii) The United States Environmental Protection Agency may authorize the use of filtering equipment other than described in Paragraphs (j)(1)(i), (2)(i) and (2)(ii) if the owner or operator demonstrates to the EPA Administrator's satisfaction that it is equivalent to the described equipment in filtering particulate asbestos material.

**(l) Reporting.**

- (1) Any new source to which this regulation applies (with the exception of Paragraphs (b), (e) and (g)), which has an initial startup date preceding the effective date of this revision, shall provide the following information to the Director postmarked or delivered within ninety (90) days of the effective date. In the case of a new source that does not have an

initial startup date proceeding the effective date, the information shall be provided within ninety (90) days of the initial startup date. Any owner or operator of an existing source shall provide the following information provided by an existing source shall be provided to the Director within thirty (30) days after the change.

- (i) A description of the emission control equipment used for each process; and
- (ii) If a fabric filter device is used to control emissions:
  - (A) The airflow permeability in  $\text{ft}^3/\text{min}/\text{ft}^2$  if the fabric filter device uses a woven fabric, and if the fabric is synthetic, whether the fill yarn is spun or not spun; and
  - (B) If the fabric filter device uses a felted fabric, the density in  $\text{oz.}/\text{yd}^2$ , the minimum thickness in inches and the airflow permeability in  $\text{ft}^3/\text{min}/\text{ft}^2$ .
- (iii) If a HEPA filter is used to control emissions, the certified efficiency.
- (iv) For sources subject to Paragraphs (h) and (i):
  - (A) A brief description of each process that generates asbestos-containing waste material; and
  - (B) The average volume of asbestos-containing waste material disposed of measured in  $\text{yd}^3/\text{day}$ ; and
  - (C) The emission control methods used in all stages of waste disposal; and
  - (D) The type of disposal site or incineration site used for ultimate disposal, the name of the site operator and the name and location of the disposal site.
- (v) For sources subject to Paragraphs (j) and (m):
  - (A) A brief description of the site; and
  - (B) The method or methods used to comply with the standard or alternative procedures to be used.
- (2) The information required by Paragraph (l)(1) must accompany the information required by Section 4-4 of this Regulation. Active waste disposal sites subject to Paragraph (m) shall also comply with this provision. Roadways, demolition and renovation, spraying and insulating materials are exempted from the requirements of Section 4-4.
- (m) Standard for active waste disposal sites. Each owner or operator of an active waste disposal site that receives asbestos-containing material from a source covered under Paragraphs (h), (i) or (n) shall meet the requirements of this section:
  - (1) Either there must be no visible emission to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of Paragraph (m)(3) or (m)(4) of this paragraph must be met.
  - (2) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of Paragraph (m)(3)(i) of this paragraph must be met.
    - (i) Warning signs must be displayed at all entrances and at intervals of 330 feet or less along the property line of the site or along the parameter of the sections of



the site where asbestos-containing waste material is deposited. The warning signs must:

- (A) Be posted in such a manner and location that a person can easily read the legend; and
    - (B) Conform to the requirements of Paragraph (j)(2)(i)(C).
  - (ii) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.
  - (iii) Upon receipt and supply of appropriate information, the Director will determine whether a fence or natural barrier adequately deters access by the general public.
- (3) Rather than meet the no visible emission requirement of Paragraph (m)(1) at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:
- (i) Be covered with at least six (6) inches of compacted nonasbestos containing material, or
  - (ii) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Director. For purposes of this paragraph, any used, spent or other waste oil is not considered a dust suppression agent.
- (4) Rather than meet the no visible emission requirement of Paragraph (m)(1), use an alternative emissions control method that has received prior written approval by the United States Environmental Protection Agency according to the procedures described in Paragraph (h)(3)(ii).
- (5) For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:
- (i) Maintain waste shipment records and include the following information:
    - (A) The name, address and telephone number of the waste generator.
    - (B) The name, address and telephone number of the transporter(s).
    - (C) The quantity of the asbestos-containing waste material in cubic yards.
    - (D) The presence of improperly enclosed or uncovered waste, or any asbestos-containing material not sealed in leak-tight containers. Report in writing to the Metropolitan Health Department, Pollution Control Division and the State of Tennessee, Division of Solid Waste Management, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.
    - (E) The date of the receipt.

- (ii) As soon as possible but no longer than thirty (30) days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.
  - (iii) If a discrepancy exists between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within fifteen (15) days after receiving the waste, immediately report to both agencies listed in Paragraph (m)(5)(i)(D). Describe the discrepancy and attempt to reconcile it, and submit a copy of the waste shipment record along with the report.
  - (iv) Retain a copy of all records and reports required by this paragraph for at least two (2) years.
- (6) Maintain, until closure, records of the location, depth and area and quantity in cubic yards of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.
- (7) Upon closure, comply with all provisions of Paragraph (j).
- (8) Upon closure of the facility, submit a copy of records of asbestos waste disposal locations and quantities to the Director.
- (9) All records required under this section shall be furnished upon request and made available during normal business hours for inspection by the Director.
- (10) Notify the Director in writing at least forty five (45) days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Director at least ten (10) working days before excavation begins, and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:
  - (i) Scheduled starting and completion dates.
  - (ii) Reason for disturbing the waste.
  - (iii) Procedures to be used to control emissions during the excavation, storage, transport and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Director may require changes in the emission control procedures to be used.
  - (iv) Location of any temporary storage site and the final disposal site.
- (n) Standard for operations that convert asbestos-containing waste material into nonasbestos (asbestos-free) material. Each owner or operator of an operation that converts RACM and asbestos-containing waste material into nonasbestos (asbestos free) material shall:
  - (1) Obtain the prior written approval of the United States Environmental Protection Agency and the Director to construct the facility. To obtain approval, the owner or operator shall provide the United States Environmental Protection Agency and the Director with the following information:

- (i) All information required by Section 4-1-16, "Registration and Permits" of the Metropolitan Code of Law.
  - (ii) In addition, the following information shall accompany the application for a construction permit:
    - (A) Description of waste feed handling and temporary storage.
    - (B) Description of process operation conditions.
    - (C) Description of the handling and temporary storage of the end product.
    - (D) Description of the protocol to be followed when analyzing output materials by transmission electron microscopy.
  - (iii) Performance test protocol, including provisions for obtaining information required under Paragraph (n)(2).
  - (iv) The Director or EPA Administrator may require that a demonstration of the process be performed prior to approval of the application to construct.
- (2) Conduct a start-up performance test. Test results shall include:
- (i) A detailed description of the types and quantities of nonasbestos material, RACM and asbestos-containing waste material processes, e.g., asbestos cement products, friable asbestos insulation, plaster, wood, plastic, wire, etc. Test feed is to include the full range of materials that will be encountered in actual operation of the process.
  - (ii) Results of analysis, using polarized light microscopy, that document the asbestos content of the wastes processed.
  - (iii) Results of analyses, using transmission electron microscopy, that document that the output materials are free of asbestos. Samples for analysis are to be collected as eight (8) hour composite samples (one seven-ounce sample per hour), beginning with the initial introduction of RACM or asbestos-containing waste material and continuing until the end of the performance test.
  - (iv) A description of operating parameters, such as temperature and residence time, defining the full range over which the process is expected to operate to produce nonasbestos (asbestos-free materials). Specify the limits for each operating parameter within which the process will produce nonasbestos (asbestos-free) materials.
  - (v) The length of the test.
- (3) During the initial ninety (90) days of operation:
- (i) Continuously monitor and log the operating parameters identified during start-up performance tests that are intended to ensure the production of nonasbestos (asbestos-free) output materials.
  - (ii) Monitor input materials to ensure that they are consistent with the test feed materials described during start-up performance tests in Paragraph (n)(2)(i).
  - (iii) Collect and analyze samples (one 7-ounce sample collected every eight (8) hours of operation) of all output material for the presence of asbestos. Composite

samples may be for fewer than ten (10) days. Transmission electron microscopy (TEM) shall be used to analyze the output material for the presence of asbestos. During the initial ninety (90) day period, all output materials must be stored on-site until the analysis shows the material to be asbestos-free or disposed of as asbestos-containing waste material according to Paragraph (i).

(4) After the initial ninety (90) days of operation:

- (i) Continuously monitor and record the operating parameters identified during start-up performance testing and any subsequent performance testing. Any output produced during a period of deviation from the range of operating conditions established to ensure the production of nonasbestos (asbestos-free) output materials shall be:
  - (A) Disposed of as asbestos-containing waste material according to Paragraph (i), or
  - (B) Recycled as waste feed during process operation within the established range of operating conditions, or
  - (C) Stored temporarily on-site in a leak-tight container until analyzed for asbestos content. Any product material that is not asbestos-free shall either be disposed of as asbestos-containing waste material or recycled as waste feed to the process.
- (ii) Collect and analyze monthly composite samples (one 7-ounce sample collected every eight (8) hours of operation) of the output material. Transmission electron microscopy (TEM) shall be used to analyze the output material for the presence of asbestos.

(5) Discharge no visible emissions to the outside air from any part of the operation, or use the methods specified by Paragraph (k) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the outside air.

(6) Maintain records on-site and include the following information:

- (i) Results of start-up performance testing and all subsequent performance testing, including operating parameters, feed characteristic and analyses of output materials.
- (ii) Results of the composite analysis required during the initial 90 days of operation under Paragraph (n)(3).
- (iii) Results of the monthly composite analysis required under Paragraph (n)(4).
- (iv) Results of continuous monitoring and logs of process operating parameters required under Paragraphs (n)(3) and (4).
- (v) The information on waste shipments received as required in Paragraph (m)(5).
- (vi) For output materials where no analysis were performed to determine the presence of asbestos, record the name and location of the purchaser or disposal site to which the output materials were sold or deposited and the date of sale or disposal.

- (vii) Retain records required by Paragraph (n)(6) for at least two (2) years.
- (7) Submit the following reports to the Director:
  - (i) A report for each analysis of product composite samples performed during the initial ninety (90) days of operation.
  - (ii) A quarterly report, due no later than thirty (30) days after the end of each calendar quarter, including the following information:
    - (A) Results of analysis of monthly product composite samples.
    - (B) A description of any deviation from the operating parameters established during performance testing, the duration of the deviation and steps taken to correct the deviation.
    - (C) Disposition of any product produced during a period of deviation, including whether it was recycled, disposed of as asbestos-containing waste material or stored temporarily on-site, until analyzed for asbestos content.
    - (D) The information on waste disposal activities as required in Paragraph (m)(6).
- (8) Nonasbestos (asbestos-free) output material is not subject to any of the provisions of Section 4-7. Output materials in which asbestos is detected, or output materials produced when the operating parameters deviated from those established during the start-up performance testing, unless shown by TEM analysis to be asbestos-free, shall be considered to be asbestos-containing waste and shall be handled and disposed of according to Paragraphs (l) and (m) or reprocessed while all of the established operating parameters are being met.

#### **SECTION 4-8: Emission Standards For Beryllium**

- (a) Emissions to the atmosphere from the following stationary sources shall not exceed ten (10) grams of beryllium over a 24-hour period:
  - (1) Extraction plants, ceramic plants, foundries, incinerators, and propellant plants which process beryllium alloys, beryllium ore, beryllium, beryllium oxide, or beryllium-containing waste.
  - (2) Machine shops which process beryllium, beryllium oxides, or any alloy when such alloy contains more than five (5) percent beryllium by weight.
- (b) The burning of beryllium and/or beryllium containing waste, except propellants is prohibited except in incinerators, emissions from which must comply with the above standards.

## **SECTION 4-9: Emission Standards for Mercury**

The provisions of this Section apply to those stationary sources which process mercury ore to recover mercury, use mercury chlor-alkali cells to produce chlorine gas and alkali metal hydroxide, and incinerate dry wastewater treatment plant sludge.

- (a) Emissions to the atmosphere from mercury ore processing facilities and mercury cell chlor-alkali plants shall not exceed 2,300 grams of mercury per 24-hour period.
- (b) Emissions to the atmosphere from sludge incineration plants, sludge drying plants, or a combination of these that process wastewater treatment plant sludges shall not exceed 3,200 grams of mercury per 24-hour period.

## **SECTION 4-10: Perchloroethylene Air Emission Standards From Dry Cleaning Facilities**

### **(a) “Applicability”**

The provisions of this Section apply to the owner or operator of each dry cleaning facility that uses perchloroethylene.

- (1) Each dry cleaning system that commences construction or reconstruction on or after December 9, 1991, shall be in compliance with the provisions of this Section beginning on March 8, 1994, or immediately upon startup, whichever is later, except for dry cleaning systems complying with Section 112(i)(2) of the Clean Air Act.
- (2) Each dry cleaning system that commenced construction or reconstruction before December 9, 1991, shall be in compliance with the provisions of Paragraph (c)(1), (3), (4), (5), (8), (9), (10), (11), and (12), Paragraph (d)(1), (2), and (4), and Paragraph (e)(1), (2), (3) and (4), by December 20, 1993, and shall comply with the other provisions of this Section by April 30, 1994.
- (3) All coin-operated dry cleaning machines are exempt from the requirements of this Section.

### **(b) “Definitions”**

For the purpose of this Section, the following definitions apply:

- (1) **“Administrator”** - means the administrator of the United States Environmental Protection Agency or his or her authorized representative (e.g., a State that has been delegated the authority to implement the provisions of this part).
- (2) **“Ancillary equipment”** - means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps,

filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

- (3) **“Articles”** - means clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned.
- (4) **“Area source”** - means any perchloroethylene dry cleaning facility that does not meet the definition of a major source.
- (5) **“Carbon adsorber”** - means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon.
- (6) **“Coin-operated dry cleaning machine”** - means a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine).
- (7) **“Colorimetric detector tube”** - means a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.
- (8) **“Construction”** - for the purposes of this Section, means the fabrication (onsite), erection, or installation of a dry cleaning system subject to this Section.
- (9) **“Desorption”** - means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.
- (10) **“Diverter valve”** - means a flow control device that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open.
- (11) **“Dry cleaning”** - means the process of cleaning articles using perchloroethylene.
- (12) **“Dry cleaning cycle”** - means the washing and drying of articles in a dry-to-dry machine or transfer machine system.
- (13) **“Dry cleaning facility”** - means an establishment with one or more dry cleaning systems.
- (14) **“Dry cleaning machine”** - means a dry-to-dry machine or each machine of a transfer machine system.
- (15) **“Dry cleaning machine drum”** - means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.
- (16) **“Dry cleaning system”** - means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.
- (17) **“Dryer”** - means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).
- (18) **“Dry-to-dry machine”** - means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.
- (19) **“Exhaust damper”** - means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine.

- (20) **“Existing”** - means commenced construction or reconstruction before December 9, 1991.
- (21) **“Filter”** - means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter (button trap), cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.
- (22) **“Heating coil”** - means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream reenters the dry cleaning machine drum.
- (23) **“Major source”** - means any dry cleaning facility that emits or has the potential to emit 10 tons per year of perchloroethylene to the atmosphere.
- (24) **“Muck cooker”** - means a device for heating perchloroethylene laden waste material to volatilize and recover perchloroethylene.
- (25) **“New”** - means commenced construction or reconstruction on or after December 9, 1991.
- (26) **“Perceptible leaks”** - means any perchloroethylene vapor or liquid leaks that are obvious from:
- (i) The odor of perchloroethylene;
  - (ii) Visual observation, such as pools or droplets of liquid; or
  - (iii) The detection of gas flow by passing the fingers over the surface of equipment.
- (27) **“Perchloroethylene consumption”** - means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.
- (28) **“Reclaimer”** - means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).
- (29) **“Reconstruction”** - for the purposes of this Section, means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source.
- (30) **“Refrigerated condenser”** - means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.
- (31) **“Refrigerated condenser coil”** - means the coil containing the chilled liquid used to cool and condense the perchloroethylene.
- (32) **“Responsible official”** - means one of the following:
- (i) For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more dry cleaning facilities;



- (ii) For a partnership: A general partner;
  - (iii) For a sole proprietorship: The owner; or
  - (iv) For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking official.
- (33) **“Room enclosure”** - means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.
- (34) **“Source”** - for purposes of this Section, means each dry cleaning system.
- (35) **“Still”** - means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.
- (36) **“Temperature sensor”** - means a thermometer or thermocouple used to measure temperature.
- (37) **“Transfer machine system”** - means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:
- (i) A washer and dryer(s);
  - (ii) A washer and reclaimer(s); or
  - (iii) A dry-to-dry machine and reclaimer(s).
- (38) **“Washer”** - means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.
- (39) **“Water separator”** - means any device used to recover perchloroethylene from a water-perchloroethylene mixture.
- (40) **“Weekly”** - means any seven (7) day period of time.
- (41) **“Year or Yearly”** - means any consecutive twelve (12) month period of time.
- (c) **“Standards”**.
- (1) The owner or operator of each dry cleaning system subject to this regulation that was constructed prior to December 9, 1991, shall:
    - (i) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device, or through a carbon adsorber installed on the dry cleaning machine prior to September 22, 1993; and
    - (ii) Contain the dry cleaning machine inside a room enclosure if the dry cleaning machine is a transfer machine located at a major source. Each room enclosure shall be:
      - (A) Constructed of materials impermeable to perchloroethylene; and
      - (B) Designed and operated to maintain a negative pressure at each opening at all times that the machine is operating.

- (2) The owner or operator of each dry cleaning system subject to this Regulation that was constructed on or after December 9, 1991, shall:
  - (i) Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser or an equivalent control device;
  - (ii) Eliminate any emissions of perchloroethylene during the transfer of articles between the washer and dryer(s); and
  - (iii) Pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.
- (3) The owner or operator of each dry cleaning system subject to this Regulation shall:
  - (i) Close the door of each dry cleaning machine immediately after transferring articles to or from the machine and keep the door closed at all other times; and
  - (ii) Operate the system according to the manufacturer's specifications and recommendations provided that those recommendations do not conflict with any specific provisions of this Regulation.
- (4) Each refrigerated condenser used for the purpose of complying with Paragraphs (1) or (2) and installed in a dry-to-dry machine, dryer, or reclaimer:
  - (i) Shall be operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating;
  - (ii) Shall be monitored according to Paragraph (d)(1)(i); and
  - (iii) Shall be operated with a diverter valve, which prevents air draw into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.
- (5) Each refrigerated condenser used for the purpose of complying with Paragraph (1) and installed on a washer:
  - (i) Shall be operated to not vent the air-perchloroethylene gas-vapor contained within the washer to the atmosphere until the washer door is opened;
  - (ii) Shall be monitored according to Paragraph (d)(1)(ii); and
  - (iii) Shall not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer, or reclaimer.
- (6) Each carbon adsorber used for the purposes of complying with Paragraphs (1) or (2):
  - (i) Shall not be bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time; and
  - (ii) Shall be monitored according to the applicable requirements in Paragraph (d)(2) or (3).

- (7) Each room enclosure used for the purposes of complying with Paragraph (1)(ii) of this Section:
    - (i) Shall be operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device; and
    - (ii) Shall be equipped with a carbon adsorber that is not the same carbon adsorbor used to comply with Paragraph (1)(i) or (2)(iii).
  - (8) The owner or operator of an affected facility shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.
  - (9) The owner or operator of an affected facility shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no perceptible leaks.
  - (10) The owner or operator of a dry cleaning system shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating:
    - (i) Hose and pipe connections, fittings, couplings, and valves;
    - (ii) Door gaskets and seatings;
    - (iii) Filter gaskets and seatings;
    - (iv) Pumps;
    - (v) Solvent tanks and containers;
    - (vi) Water separators;
    - (vii) Muck cookers;
    - (viii) Stills;
    - (ix) Exhaust dampers;
    - (x) Diverter valves; and
    - (xi) Cartridge filter housings.
  - (11) The owner or operator of a dry cleaning system shall repair all perceptible leaks detected under Paragraph (10) of this Section within 24 hours. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within two (2) working days of detecting such a leak. Such repair parts shall be installed within five (5) working days after receipt.
  - (12) If parameter values monitored under Paragraphs (3), (4), or (5) do not meet the values specified in Paragraph (d)(1), (2), or (3), adjustments or repairs shall be made to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within two (2) working days of detecting such a parameter value. Such repair parts shall be installed within five (5) working days after receipt.
- (d) "Test Methods and Monitoring."
- (1) When a refrigerated condenser is used to comply with Paragraph (c)(1)(i) or (2)(i):

- (i) The owner or operator shall measure the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer weekly with a temperature sensor to determine if it is equal to or less than 7.2° C (45° F). The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2° C (45° F) to an accuracy of  $\pm 1.1^{\circ}\text{C}$  ( $\pm 2^{\circ}\text{F}$ ):
  - (ii) The owner or operator shall calculate the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the temperature of the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1° C (20° F).
    - (A) Measurements of the inlet and outlet streams shall be made with a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 0° C (32° F) to 48.9° C (120° F) to an accuracy of  $\pm 1.1^{\circ}\text{C}$  ( $\pm 2^{\circ}\text{F}$ ).
    - (B) The difference between the inlet and outlet temperatures shall be calculated weekly from the measured values.
- (2) When a carbon adsorber is used to comply with Paragraph (c)(1)(i) or exhaust is passed through a carbon adsorber immediately upon machine door opening to comply with Paragraph (c)(2)(iii), the owner or operator shall measure the concentration of perchloroethylene in the exhaust of the carbon adsorber weekly with a colorimetric detector tube, while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 parts per million by volume. The owner or operator shall:
- (i) Use a colorimetric detector tube designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of  $\pm 25$  parts per million by volume;
  - (ii) Use the colorimetric detector tube according to the manufacturer's instructions; and
  - (iii) Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a band, expansion, contraction, inlet or outlet.
- (3) If the air-perchloroethylene gas-vapor stream is passed through a carbon adsorber prior to machine door opening to comply with Paragraph (c)(2)(iii), the owner or operator of an affected facility shall measure the concentration of perchloroethylene in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube to determine that the perchloroethylene concentration is equal to or less than 300 parts per million by volume. The owner or operator shall:

- (i) Use a colorimetric detector tube designed to measure a concentration of 300 parts per million by volume;
  - (ii) Use the colorimetric detector tube according to the manufacturer's instructions; and
  - (iii) Conduct the weekly monitoring by inserting the colorimetric detector tube into the open space above the articles at the rear of the dry cleaning machine door.
- (4) When calculating yearly perchloroethylene consumption, the owner or operator shall perform the following calculation on the first day of every month;
  - (i) Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in Paragraph (e)(3)(i);
  - (ii) If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons; and
  - (iii) The total sum calculated in Paragraph (4) is the yearly perchloroethylene consumption at the facility.
- (e) "Reporting and Recordkeeping Requirements."
  - (1) Each owner or operator of a dry cleaning facility shall submit an initial report signed by a responsible official that the information provided in the initial report is accurate and true to the Director within 90 days after September 22, 1993, which includes the following:
    - (i) The name and address of the owner or operator;
    - (ii) The address (that is, physical location) of the dry cleaning facility;
    - (iii) A brief description of the type of each dry cleaning machine at the dry cleaning facility;
    - (iv) Documentation as described in Paragraph (d)(4) of the yearly perchloroethylene consumption at the dry cleaning facility for the previous year, or an estimation of perchloroethylene consumption for the previous year;
    - (v) A description of the type of control device(s) that will be used to achieve compliance with Paragraph (c)(1) or (2) and whether the control device(s) is currently in use or will be purchased; and
    - (vi) Documentation to demonstrate to the Director's satisfaction that each room enclosure used to meet the requirements of Paragraph (c)(1)(ii)(A), and (B).
  - (2) Each owner or operator of a dry cleaning facility shall submit a statement signed by a responsible official to the Director by registered letter on or before the 30th day following the compliance dates specified in Paragraph (a)(1) or (2), certifying the following:
    - (i) The yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to Paragraph (d)(4);
    - (ii) Whether or not they are in compliance with each applicable requirement of Paragraph (c); and
    - (iii) All information contained in the statement is accurate and true.

- (3) Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of the following information and maintain such information on site and show it upon request for a period of 5 years:
- (i) The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases; if no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log;
  - (ii) The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in Paragraph (d)(4);
  - (iii) The dates when the dry cleaning system components are inspected for perceptible leaks, as specified in Paragraph (c)(10) and the name or location of dry cleaning system components where perceptible leaks are detected;
  - (iv) The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with Paragraph (c)(11) and (12);
  - (v) The date and temperature sensor monitoring results, as specified in Paragraph (d)(1) if a refrigerated condenser is used to comply with Paragraph (c)(1) or (2); and
  - (vi) The date and colorimetric detector tube monitoring results, as specified in Paragraph (d)(2) and (3), if a carbon adsorber is used to comply with Paragraph (c)(1)(i) or (2)(iii).
- (4) Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.
- (f) "Determination of Equivalent Emission Control Technology."
- (1) Any person requesting that the use of certain equipment or procedures be considered equivalent to the requirements under Paragraph (c) shall collect, verify, and submit to the Administrator the following information to show that the alternative achieves equivalent emission reductions:
- (i) Diagrams, as appropriate, illustrating the emission control technology, its operation and integration into or function with dry-to-dry machine(s) or transfer machine system(s) and their ancillary equipment during each portion of the normal dry cleaning cycle;
  - (ii) Information quantifying vented perchloroethylene emissions from the dry-to-dry machine(s) or transfer machine system(s) during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology;
  - (iii) Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of perchloroethylene used. Solvent mileage data must be of continuous duration for at least 1 year under the conditions of a typical dry cleaning operation. This information on solvent mileage must be accompanied by information on the design, configuration, operation, and maintenance of the

specific dry cleaning system from which the solvent mileage information was obtained;

- (iv) Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance of the candidate emission control technology;
  - (v) Explanation of why this information is considered accurate and representative of both the short-term and the long-term performance of the candidate emission control technology on the specific dry cleaning system examined;
  - (vi) Explanation of why this information can or cannot be extrapolated to dry cleaning systems other than the specific system(s) examined; and
  - (vii) Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.
- (2) For the purpose of determining equivalency to control equipment required under Section 4-10.3, the Administrator will evaluate the petition to determine whether equivalent control of perchloroethylene emissions has been adequately demonstrated.
- (3) Where the Director and Administrator determine that certain equipment and procedures may be equivalent, the Administrator will publish a notice in the Federal Register proposing to consider this equipment or these procedures as equivalent. After notice and opportunity for public hearing, the Administrator will publish the final determination of equivalency in the Federal Register.

**This Section adopted: March 8, 1994  
by the Metropolitan Board of Health**

#### **SECTION 4-11: Emission Standards For Hazardous Air Pollutants**

Irrespective of the emission standards of Section 4-7, 4-8, 4-9, or 4-10 of this Regulation: No person shall construct or operate any stationary source in such manner as to fail to comply with all applicable standards of performance or any other requirement established by the Environmental Protection Agency, pursuant to Section 112 of the Clean Air Act, and to that end all such standards and requirements are adopted by reference, as of their effective date, as part of this Regulation.